

Geologic Units and Stratigraphy of Bryce Canyon NP, Utah										
Era	Period	Epoch		Formation		Symbol	Description			
Cenozoic	Quaternary	Holocene		Alluvium		Qal	Clay, silt, sand, and gravel. Includes some colluvium and slopewash, and coarse poorly sorted flash-flood deposits in narrow canyons. Thickness 0-40 ft			
		Pleistocene and Holocene		Colluvium		Qc	Slopewash or mass-wasting debris derived from adjacent bedrock or older surficial deposits. Includes some talus and slump deposits beneath steeper slopes. Thickness 0-30 ft			
				Landslide Deposits		Qls	Slide or slump debris derived from adjacent bedrock. On Horse Mountain consists of slides or mudflows derived from Tropic Shale; northwest of town of Tropic consists mostly of slide or slump blocks derived from Straight Cliffs Formation. Thickness 0-100 ft			
				Older Alluvium and Colluvium		Qoac	Older alluvium and colluvium in northern part of map area. Includes gravels of East Fork Sevier River and sediments of mixed origin. Consists mostly of limestone clasts derived from Claron Formation; in extreme northwest corner of map area includes volcanic clasts derived from southern Sevier Plateau. Thickness 0-60 ft			
		Pleistocene		Pediment Deposits		Qp	Sand and gravel occurring as remnants of formerly extensive pediment deposits, and lesser amounts of alluvial fan deposits. Coarser clasts are predominantly subrounded to subangular limestone pebbles or cobbles in a sandy calcareous matrix; may contain as much as 20 percent clasts of well-rounded chert and quartzite. Includes some terrace deposits along major drainage channels. May include deposits of Pliocene age. Thickness 0-100 ft			
				Pliocene		Sevier River		QTsr	Tan to light-gray, moderately sorted conglomeratic sandstone and conglomerate. Contains sub-rounded to sub-angular clasts of volcanic rocks and angular limestone fragments in a calcareous sandstone matrix; includes volcanic clasts as much as 8 inches in diameter, probably derived from souther Sevier Plateau. Thickness 0-80 ft	
		Oligocene				Boat Mesa Conglomerate		Tbm	Light-brown, tan, and gray calcareous sandstone and conglomeratic sandstone, and light-gray to white limestone and conglomeratic limestone. Coarser clasts consist of pebbles of black, gray, and tan chert, and tan quartzite. Thickness 0-100ft	
		Eocene		Lower-Middle		Claron		White Limestone Member	Tcw	White, light-gray, or tan, fine-grained to microcrystalline, cliff forming limestone. Generally thick bedded to massive with indistinct bedding, but locally thin bedded with purplish-gray mudstone interbeds. From resistant caprock on highest parts of Paunsaugunt Plateau. Elsewhere includes rocks of Oligocene age. Thickness 0-300 ft
								Pink Limestone Member	Tcp	Pale-pink, red, pale-orange, and tan, very fine-grained, thin- to thick-bedded limestone, argillaceous limestone, and dolomitic limestone with sparce thin interbeds of gray or tan calcareous mudstone. A basal conglomerate 0-40 ft thick occurs locally and consists of varicolored pebbles and cobbles of quartzite, chert, and lesser amounts of limestone. Forms fluted cliffs, columns, hoodoos, and spires, as well as steep slopes, all created by weathering and differential erosion of interbedded harder and softer layers. Much of the spectacular badlands of Bryce Canyon national Park are carved from these beds. Thickness 400-700ft
		Mesozoic	Cretaceous	Upper		Kaiparowits		Kk	Light-brown, tan, and greenish-gray, very fine-grained, friable sandstone, and buff, fine-grained, moderately resistant, lenticular sandstone and interbedded light-gray to purplish-gray or tan mudstone. Formation mostly removed from Paunsaugunt Plateau by pre-Claron erosion. Present only west of Buck Knoll in western part of map area where basal part of unit is exposed. Thickness 0-100 ft	
Wahweap						Kw	Upper 50-100 ft consist of light-gray to white, fine- to coarse-grained, crossbedded sandstone and conglomeratic sandstone containing small pebbles of gray chert and tan quartzite. Lower 600 ft is buff to light brown, hard, fine-grained, lenticular sandstone interbedded with gray to tan mudstone, thin beds of light-gray or white siltstone, and very fine-grained sandstone. Thickness 0-700 ft			
Straight Cliffs						Upper Part	Ksu	Upper 100-200 ft consists of white, thick bedded to massive, medium- to coarse-grained, crossbedded sandstone containing lenses of pebble conglomerate; forms steep slopes or sandy gravel covered benches. Lower 800-1,100 ft is buff, tan, and light-brown, very fine-grained to fine-grained sandstone and interbedded gray to tan mudstone. A 30-ft interval of carbonaceous shale and thin coal about 100 ft above the base is probably equivalent to the Henderson coal zone (Robison, 1966) farther east. Unit is equivalent to the Drip Tank and John Henry Members (Peterson, 1969b) in the Kaiparowits Plateau. Thickness 900-1,300 ft		
						Lower Part	Ksl	Upper 80-100 ft is white to light-gray, fine to medium-grained, crossbedded sandstone containing lenses of conglomeratic sandstone or pebble conglomerate. Middle 200-250 ft is buff and tan, fine-grained, lenticular sandstone with interbedded tan to gray mudstone, carbonaceous mudstone, and local thin coal beds. Lower 40-50 ft is buff to light-brown, very fine grained, flat-bedded to low-angle crossbedded, cliff-forming marine sandstone. Unit is equivalent to the Smoky Hollow and Tibbet Canyon Members (Peterson, 1969b) in the Kaiparowits Plateau. Thickness 320-400 ft		
Tropic Shale						Kt	Gray to olive-gray marine shale. Includes thin, very fine-grained sandstone beds in upper part. Lower part contains very thin beds of tan bentonitic clay and a basal limestone concretion zone, which may contain marine fossils. Thickness 700-1,000 ft			
Dakota						Kd	Interbedded buff to light-brown sandstone, gray to tan mudstone, dark carbonaceous mudstone, and coal. Basal sandstone is gray to light brown, medium- to coarse- grained or conglomeratic. Some pebble-cobble conglomerate is present locally. Thickness 180-300 ft			
Jurassic	Middle			Entrada Sandstone		Je	Light tan to white, locally red banded, very fine-grained sandstone and silty sandstone. Generally flat bedded and weakly to moderately cemented. Lower part locally white to red, fine- to medium-grained, crossbedded. Thickness 300-500 ft			
				Carmel		Upper Member	Jcu/Jcul	Red, pale-orange, and white, fine-grained sandstone, silty sandstone, and mudstone. Upper part contains tan, thin-bedded, fine-grained silty sandstone, mudstone, and very thin, tan to white gypsum beds. Lower part contains a light-gray, thin-bedded limestone marker bed (Jcul) about 15 ft thick and located 150 ft above base. Unit is about 600-700 ft thick		
Gypsiferous Member and Thousand Pockets Tongue of Page Sandstone			Jcgt			Gypsiferous member is thick-bedded, white, massive gypsum in lower part and thin-bedded, interbedded gray or greenish-gray mudstone, gypsiferous mudstone, and gypsum in upper part; about 30-50 ft thick. Thousand Pockets Tongue of Page Sandstone is white, yellowish-gray, or rust-colored, fine-grained, crossbedded sandstone; usually forms cliffs with overlying gypsum; pinches out northwestward; about 5-15 ft thick				

Summarized from “**Geologic Map of Bryce Canyon National Park and Vicinity, Southwestern Utah**” by William E. Bowers, 1990; USGS Miscellaneous Investigations Series Map I-2108

NOTE: squiggly lines represent unconformities (major breaks in the geologic record)

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				Banded Member	Jcb	Red, fine-grained sandstone and mudstone, and thin-bedded, interbedded gray to white sandstone and greenish-gray mudstone. Thins eastward and grades into Thousand Pockets Tongue of Page Sandstone (Peterson and Pipiringos, 1979, p. 13-14). About 100 ft thick
				Limestone Member	Jcl	Gray, thin-bedded, cliff-forming limestone, and thin-bedded, interbedded gray mudstone, shale, and gypsum, mostly in lower part. Only upper part exposed in map area. Unconformable on underlying Lower Jurassic Navajo Sandstone. About 120 ft thick